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भारतीय मानक

खाने योग्य कम — वसा सोया आटा — विशिष्टि

(पहला पुनरीक्षण)

Indian Standard

EDIBLE LOW-FAT SOYA FLOUR — SPECIFICATION

(First Revision)

ICS 67.060

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

October 2013 **Price Group 1**

Foodgrains, Starches and Ready-to-Eat Foods Sectional Committee, FAD 16

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Foodgrains, Starches and Ready-to-Eat Foods Sectional Committee had been approved by the Food and Agriculture Division Council.

India produces about 7.3 million tonnes of soyabean annually. Soyabean is a grain legume and contains about 40 percent good quality protein, 30 percent carbohydrates, 20 percent fat and reasonable amounts of minerals and vitamins. Soyabean and soya products are nutritious, economical and health promoting. Soyabean protein is rich in lysine, an essential amino acid, and can therefore, serve as a nutritionally useful ingredient and supplement to cereal products in blended and processed foods. Soyabean products are manufactured in the country in many forms, such as full-fat, medium-fat and low-fat flours, extruded products and protein isolates, and there is a scope for developing others. However, soyabean requires careful processing to transform/make it fit for human consumption.

Separate Indian Standards have been formulated to cover the requirements of full-fat, medium-fat and low-fat edible soya flours and of soya protein isolates. This standard on low-fat soya flour was first published in 1975. This standard is now being revised and the following major modifications from the earlier version have been incorporated:

a) Existing chemical and microbiological requirements have been made stricter;
b) Classification of low-fat soya flour into two grades based on particle size;
c) Additional requirements like urease activity, trypsin inhibitor activity and lysine availability have been included; and
d) Modifications in packing and labeling requirements.

In the preparation of this standard, due consideration has been given to the provisions of *Food Safety and Standards Act*, 2006 and Rules framed thereunder and the *Legal Metrology (Packaged Commodities) Rules*, 2011. However, this standard is subject to restrictions imposed under these, wherever applicable.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard
EDIBLE LOW-FAT SOYA FLOUR — SPECIFICATION
(First Revision)

1 SCOPE

1.1 This standard prescribes the requirements and methods of sampling and test for edible low-fat soya flour.

2 REFERENCES

The standards given below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of these standards:

IS No.	*Title*
1070 : 1992	Reagent grade water — Specification (*third revision*)
2491 : 1998	Food hygiene — General principles — Code of practice (*second revision*)
2566 : 1993	Specification for B-twill jute bags for packing foodgrains (*third revision*)
3470 : 2002	Hexane, food grade — Specification (*first revision*)
4684 : 1975	Edible groundnut flour (expeller pressed) (*first revision*)
4876 : 1986	Specification for edible cottonseed flour (solvent extracted) (*first revision*)
5401 (Part 1) : 2012/ISO 4832 : 2006	Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of coliforms: Part 1 Colony count technique (*second revision*)
5402 : 2012/ ISO 4833 : 2003	Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of micro-organisms — Colony-count technique at 30°C (*second revision*)
5403 : 1999	Method for yeast and mould count of food stuffs and animal feeds (*first revision*)
5887 (Part 3) : 1999/ ISO 6579 : 1993	Methods for detection of bacteria responsible for food poisoning: Part 3 General guidance on methods for the detection of *Salmonella*
Part 8	Horizontal method for enumeration of coagulase-positive staphylococci (*Staphylococcus aureus* and other species),
(Sec 1) : 2002/ ISO 6888-1 : 1999	Technique using Baird-Parker agar medium
(Sec 2) : 2002/ ISO 6888-2 : 1999	Technique using rabbit plasma fibrinogen agar medium
7835 : 2013	Edible medium-fat soya flour — Specification (*first revision*)
10171 : 1999	Guide on suitability of plastics for food packaging (*second revision*)
11674 : 1986	Method for determination of residual solvent in oilseed flours and meals by modified Pensky Martens closed tester
14818 : 2000	Cereal and pulses and milled products — Sampling of static batches

3 REQUIREMENTS

3.1 Description

The edible low-fat soya flour shall be prepared from clean, sound and wholesome soyabeans by a process of cracking, dehulling, solvent extraction using food grade hexane (*see* IS 3470). It shall be in the form of coarse or fine powder, or grits; white or creamy-white to yellow in colour.

3.2 Edible low-fat soya flour shall be free from rancid odour, extraneous matter, insects, insect fragments (living and dead), rodent hair, excreta and fungal infestation and other foreign material. The product shall be free from any artificial colouring matter or flavouring agents.

3.3 The product shall be classified as Grade I or II based on particle size as under:

a)	Grade I	0-40 mesh size
b)	Grade II	40-100 mesh size

3.4 Hygienic Conditions

The product shall be manufactured, packed and stored under strict hygienic conditions (*see* IS 2491).

3.5 The product shall also conform to the requirements given in Table 1.

4 PACKING AND MARKING

4.1 Packing

4.1.1 The product shall be packed in food grade plastic material (*see* IS 10171) or polyethylene-lined jute bags or in clean tin-plate containers conforming to IS 2566 or in any other food grade packing material as agreed to between the purchaser and the supplier. If packed in jute bags, the mouth of each bag shall be either machine-stitched or hand stitched. If it is hand stitched, the mouth shall be rolled over and then stitched. The stitches shall be in two cross rows with at least 14 stitches in each row.

4.2 Marking

4.2.1 The following particulars shall be marked or labelled legibly and indelibly on each container:

a) Name of the material, and trademark, if any;
b) Name and address of the manufacturer;
c) Batch or code number;
d) Net quantity in grams or kilograms;
e) Date of manufacture;
f) List of ingredients;
g) Nutritional contents such as protein, fat, carbohydrates, minerals and vitamins, dietary fibre;
h) Instructions as to how to use the product;
j) The words 'Best before.....', (the date to be given by the manufacturer); and
k) Any other information required under the *Legal Metrology (Packaged Commodities) Rules*, 2011 and *Food Safety and Standards Act*, 2006 and the Rules framed thereunder.

4.2.2 *BIS Certification Marking*

The product may also be marked with the Standard Mark.

4.2.2.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

5 SAMPLING

5.1 Representative samples of the material shall be drawn and conformity of the material to the requirements of the specification shall be determined according to the procedure given in IS 14818.

6 TESTS

6.1 Tests shall be carried out as prescribed in the appropriate Annex specified in col 4 of Table 1.

6.2 Quality of Reagents

Unless specified otherwise, pure chemicals and distilled water (*see* IS 1070) shall be employed in tests.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the results of analysis.

Table 1 Requirements for Edible Low-Fat Soya Flour
(*Clause* 3.5)

Sl No. (1)	Characteristic (2)	Requirement (3)	Method of Test, Ref to (4)
i)	Moisture, percent by mass, *Max*	9	Annex B of IS 4684
ii)	Protein, percent by mass, *Min*	48	Annex C of IS 4684
iii)	Crude fat, percent by mass, *Max*	1.5	Annex F of IS 4684
iv)	Total ash (on dry basis), percent by mass, *Max*	7.2	Annex D of IS 4684
v)	Acid insoluble ash (on dry basis), percent by mass, *Max*	0.4	Annex E of IS 4684
vi)	Crude fibre (on dry basis), percent by mass, *Max*	4.2	Annex H of IS 4684
vii)	Trypsin inhibitor activity, percent of the original, *Max*	75	Annex A of IS 7835
viii)	Urease activity (change in *p*H unit)	Nil	Annex B of IS 7835
ix)	Total free fatty acids, percent by mass, *Max*	0.9	Annex C of IS 7835
x)	Residual solvent, mg/kg, *Max*	10	IS 11674
xi)	Available lysine, gram per six gram of nitrogen, *Min*	5.5	Annex A of IS 4876
xii)	Total bacterial count, per gram, *Max*	50 000	IS 5402
xiii)	Coliforms, per gram	Absent	IS 5401 (Part 1)
xiv)	*Staphylococcus aureus,* per 25 gram	Absent	IS 5887 (Part 8/Sec l and Sec 2)
xv)	*Salmonella,* per 25 gram	Absent	IS 5887 (Part 3)
xvi)	Yeast and mould count per gram, *Max*	100	IS 5403
xvii)	Aflatoxin, mg/kg, *Max*	30	Annex J of IS 4684

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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